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REMARKS

Claims 1–5, 7–12 and 14–18 are currently pending. The proposed amendments to the claims are supported by the specification and add no new subject matter.

Claim 16 is rejected under 35 U.S.C. §112 ¶ 2 as anticipated by U.S. Pat. No. 6,329,084, issued to Tamano, et al. Applicant has amended claim 16 pursuant to the Examiner's suggestion and thus the rejection under §112 ¶2 should be withdrawn.

Claims 1, 3–5 and 14–16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,329,084 issued to Tamano, et. al. Applicant requests that this rejection be withdrawn as the feature of the present invention is further differentiated from Tamano, et al, by the above-proposed amendments after “alkyl group, alkoxy group, aryloxy group and aromatic group” are deleted from the claims. These deletions leave “cycloalkyl group” and “aralkyl group” when the perylene compounds are used in combination with other compounds.

The feature of the present invention is further differentiated from Tamano, et al. by the above-proposed amendments for limiting the perylene compound or the benzoperylene compound to only 1 or 2 diarylamino groups. Tamano, et al. teaches that the compound defined by the formula [1] has 4 diarylamino groups.

Additionally, Tamano, et al. teaches that the compound defined by the general formula [2] is used in combination with the compound defined by formula [1] (Col. 2, lines 44-46). According to the present invention, the compounds claimed are used alone without combination with other compounds. In Tamano, compounds containing a perylene skeleton causes aggregation of molecules due to high planarity, thus luminescent effectively is lowered even if the compounds are used for the organic EL device. Tamano teaches that such aggregation of molecules is suppressed by using the compounds composed of the perylene skeleton in

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The feature of the present invention is further differentiated from Tamano, et al. by the above-proposed amendments for limiting the perylene compound or the benzoperylene compound to only 1 or 2 diarylamino groups. Tamano, et al. teaches that the compound defined by the formula [1] has 4 diarylamino groups.

Additionally, Tamano, et al. teaches that the compound defined by the general formula [2] is used in combination with the compound defined by formula [1] (Col. 2, lines 44-46). According to the present invention, the compounds claimed are used alone without combination with other compounds. In Tamano, compounds containing a perylene skeleton causes aggregation of molecules due to high planarity, thus luminescent effectively is lowered even if the compounds are used for the organic EL device. Tamano teaches that such aggregation of molecules is suppressed by using the compounds composed of the perylene skeleton in

combination with other compounds. In contrast, the present invention teaches that when compounds composed of a perylene skeleton are combined with a substituent having steric hindrance, such hindrance suppresses aggregation of molecules.

Further, Tamano, et al. requires mixing control of the two compounds which results in higher manufacturing costs. The present invention can be used alone such that the manufacturing process is more cost efficient.

The organic luminescent device of the present invention cannot be anticipated by luminescent materials disclosed in Tamano, et al. The structure of the present invention compounds and the approach to solving the problem of molecular aggregation are markedly different from the teachings disclosed by Tamano, et al. Accordingly, applicants respectfully requests that the rejection be withdrawn.

Claims 1, 3-5 and 14-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 11-144869. Applicant respectfully requests that this rejection be withdrawn as the cited reference teaches the organic EL device using the compound composed of the perylene skeleton or the benzoperylene skeleton having only diarylamino groups.

According to the examples outlined in the present specification, the compound composed of perylene or benzoperylene compound having diarylamino groups is combined with a substituent having steric hindrance for suppressing aggregation of molecules so that the organic EL element having an excellent luminescent characteristic can be obtained compared to the compounds having only diarylamino groups. The effect of a substituent having steric hindrance for suppressing aggregation of molecules is not disclosed in the cited reference (JP 11-144869). The cited reference teach a broad range of substitutents which may be combined with a perylene skeleton or perylene or benzoperylene compounds. However, JP 11-144869 does not teach or

suggest the effect of any specific combination of compounds having a substituent with steric hindrance for suppressing aggregation of molecules as taught in the present invention. Thus, the examples in the present specification, as well as the proposed claims, clearly fall outside of the claims of the cited reference (JP 11-144869) and the rejection should be removed.

Claims 1–5 and 7–12 stand rejected under 35 U.S.C. Section 103(a) as being unpatentable over JP 11-185961. However, JP 11-185961 is silent on the effect of the addition of a group with steric hindrance to perylene compounds having a diarylamino group. JP 11-185961 is also silent on adding a steric hindrance group to benzoperylene in order to suppress aggregation of molecules. Applicant respectfully requests that this rejection be withdrawn as the cited reference teaches the organic EL device using the compound composes of the perylene skeleton or the benzoperylene skeleton having only diarylamino groups.

The arguments set forth above with regard to claim 1 apply equally well to dependent claims 2–5. The arguments set forth above with respect to claim 7 apply equally well to claims 8–12. Therefore, the rejection of claims 1–5 and 7–12 over JP 11-185961 should be withdrawn.

According to the examples outlined in the present specification, the compound composed of perylene or benzoperylene compound having diarylamino groups is combined with a substituent having steric hindrance for suppressing aggregation of molecules so that the organic EL element having an excellent luminescent characteristic can be obtained compared to the compounds having only diarylamino groups. The effect of a substituent having steric hindrance for suppressing aggregation of molecules is not disclosed in the cited reference (JP 11-185961). The cited reference teach a broad range of substitutents which may be combined with a perylene skeleton or perylene or benzoperylene compounds. However, JP 11-185961 does not teach or suggest the effect of any specific combination of compounds having a substituent with steric

hindrance for suppressing aggregation of molecules as taught in the present invention. Thus, the examples in the present specification, as well as the proposed claims, clearly fall outside of the claims of the cited reference (JP 11-185961) and the rejection should be removed.

Claims 1-3, 7-10 and 14-17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over JP 10-88120. The use of an organic electroluminescent element composed in a compound in accordance with a general chemical formula is described in JP 10-88120. The formula of JP 10-88120 covers a broad range of compounds. However, JP 10-88120 does not teach any specific substituent groups that have the effect of suppressing aggregation of molecules.

According to the present invention, the compound composed of perylene or benzoperylene compound having diarylamino groups is combined with substituent having steric hindrance for suppressing aggregation of molecules so that the organic EL element having an excellent luminescent characteristic can be obtained compared to the compounds having only diarylamino groups.

JP 10-88120 does not teach the effect of the above feature of the present invention. JP 10-88120 teaches the compound of formula [1] to cover a broad range of structures. However, this reference does not specifically teach the effect of a substituent having steric hindrance for suppressing aggregation of molecules. Excessive experimentation is needed to arrive at the present invention when relying solely on JP 10-88120. Therefore, applicants respectfully request that the rejection be removed.

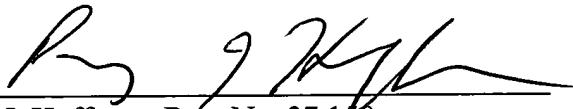
Claims 1-5 and 7-12 stand rejected under the judicially-created doctrine of obviousness/double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,329,083 B1. However, for the reasons set forth above with respect to JP 11-185961, the '083

does not suggest the surprising results demonstrated in Comparative Examples 1–4, 11–12 and 59–60 of the present specification. Therefore, the rejection of the judicially-created doctrine of obviousness/double patenting is inappropriate and should be withdrawn.

It is submitted that the present specification including all pending claims is in condition for allowance. Allowance and prompt passage to issue is respectfully requested. In the alternative, reconsideration and continuing examination are respectfully requested.

Respectfully submitted,

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